

3.3.7.6 Southern Dry-Mesic Forest

3.3.7.6.1 Community Overview

Red oak is a common dominant tree of this upland forest community type. White oak, basswood, sugar and red maples, white ash, shagbark hickory, and black cherry are also important. The herbaceous understory flora is diverse and includes many species listed under southern dry forest plus jack-in-the-pulpit, enchanter's-nightshade, large-flowered bellwort, interrupted fern, lady fern, tick-trefoils, and hog peanut.

Southern dry-mesic forests occur on loamy soils of glacial till plains and moraines, and on erosional topography with a loess cap, south of the tension zone. This community type was common historically, although white oak was considerably more dominant than red oak, and the type is still common today. However, to the detriment of the oaks, mesophytic tree species are becoming increasingly important under current management practices and fire suppression policies. Oak forests are succeeding to more mesic species (e.g., central and northern hardwood forest types), or to brush.

3.3.7.6.2 Vertebrate Species of Greatest Conservation Need Associated with Southern Dry-Mesic Forest

Twenty-seven vertebrate Species of Greatest Conservation Need were identified as moderately or significantly associated with southern dry-mesic forest (Table 3-156).

Table 3-156. Vertebrate Species of Greatest Conservation Need that are (or historically were) moderately or significantly associated with southern dry-mesic forest communities.

<i>Species Significantly Associated with Southern Dry-Mesic Forest</i>
Birds
Whip-poor-will
Acadian Flycatcher
Wood Thrush
Cerulean Warbler
Worm-eating Warbler
Louisiana Waterthrush
Hooded Warbler
Herptiles
Ornate Box Turtle
Black Rat Snake
Timber Rattlesnake
Mammals
Woodland Vole
<i>Species Moderately Associated with Southern Dry-Mesic Forest</i>
Birds
Red-shouldered Hawk
Yellow-billed Cuckoo
Red-headed Woodpecker
Veery
Blue-winged Warbler
Yellow-throated Warbler
Kentucky Warbler
Herptiles
Blanding's Turtle
Northern Prairie Skink
Western Worm Snake
Yellow-bellied Racer
Prairie Ringneck Snake
Bullsnake
Mammals
Northern Long-eared Bat
Eastern Red Bat
Gray Wolf

In order to provide a framework for decision-makers to set priorities for conservation actions, the species identified in Table 3-156 were subject to further analysis. The additional analysis identified the best opportunities, by Ecological Landscape, for protection, restoration, and/or management of both southern dry-mesic forest and associated vertebrate Species of Greatest Conservation Need. The steps of this analysis were:

- Each species was examined relative to its probability of occurrence in each of the 16 Ecological Landscapes in Wisconsin. This information was then cross-referenced with the opportunity for protection, restoration, and/or management of southern dry-mesic forest in each of the Ecological Landscapes (Tables 3-157 and 3-158).

- Using the analysis described above, a species was further selected if it had both a significant association with southern dry-mesic forest and a high probability of occurring in an Ecological Landscape(s) that represents a major opportunity for protection, restoration and/or management of southern dry-mesic forest. These species are shown in Figure 3-33.

Table 3-157. Vertebrate Species of Greatest Conservation Need that are (or historically were) *significantly* associated with southern dry-mesic forest communities and their association with Ecological Landscapes that support southern dry-mesic forest.

Southern Dry Mesic Forest	Birds (7)*							Herptiles (3)			Mammals (1)	
	Whip-poor-will	Acadian Flycatcher	Wood Thrush	Cerulean Warbler	Worm-eating Warbler	Louisiana Waterthrush	Hooded Warbler	Ornate Box Turtle	Black Rat Snake	Timber Rattlesnake	Woodland Vole	
MAJOR												
Central Sand Plains												
Southeast Glacial Plains												
Western Coulee and Ridges												
IMPORTANT												
Central Lake Michigan Coastal												
Central Sand Hills												
Southern Lake Michigan Coastal												
Southwest Savanna												
Western Prairie												
PRESENT (MINOR)												
Forest Transition												

* The number shown in parentheses is the number of Species of Greatest Conservation Need from a particular taxa group that are included in the table. Taxa groups that are not shown did not have any Species of Greatest Conservation Need that met the criteria necessary for inclusion in this table.

Table 3-158. Vertebrate Species of Greatest Conservation Need that are (or historically were) *moderately* associated with southern dry-mesic forest communities and their association with Ecological Landscapes that support southern dry-mesic forest.

Southern Dry-Mesic Forest																
Ecological Landscape grouped by opportunity for management, protection, and/or restoration of this community type	Birds (7)*							Herptiles (6)					Mammals (3)			
	Red-shouldered Hawk	Yellow-billed Cuckoo	Red-headed Woodpecker	Veery	Blue-winged Warbler	Yellow-throated Warbler	Kentucky Warbler	Blanding's Turtle	Northern Prairie Skink	Western Worm Snake	Yellow-bellied Racer	Prairie Ringneck Snake	Bullsnake	Northern Long-eared Bat	Eastern Red Bat	Gray Wolf
MAJOR																
Central Sand Plains																
Southeast Glacial Plains																
Western Coulee and Ridges																
IMPORTANT																
Central Lake Michigan Coastal																
Central Sand Hills																
Southern Lake Michigan Coastal																
Southwest Savanna																
Western Prairie																
PRESENT (MINOR)																
Forest Transition																

Color Key

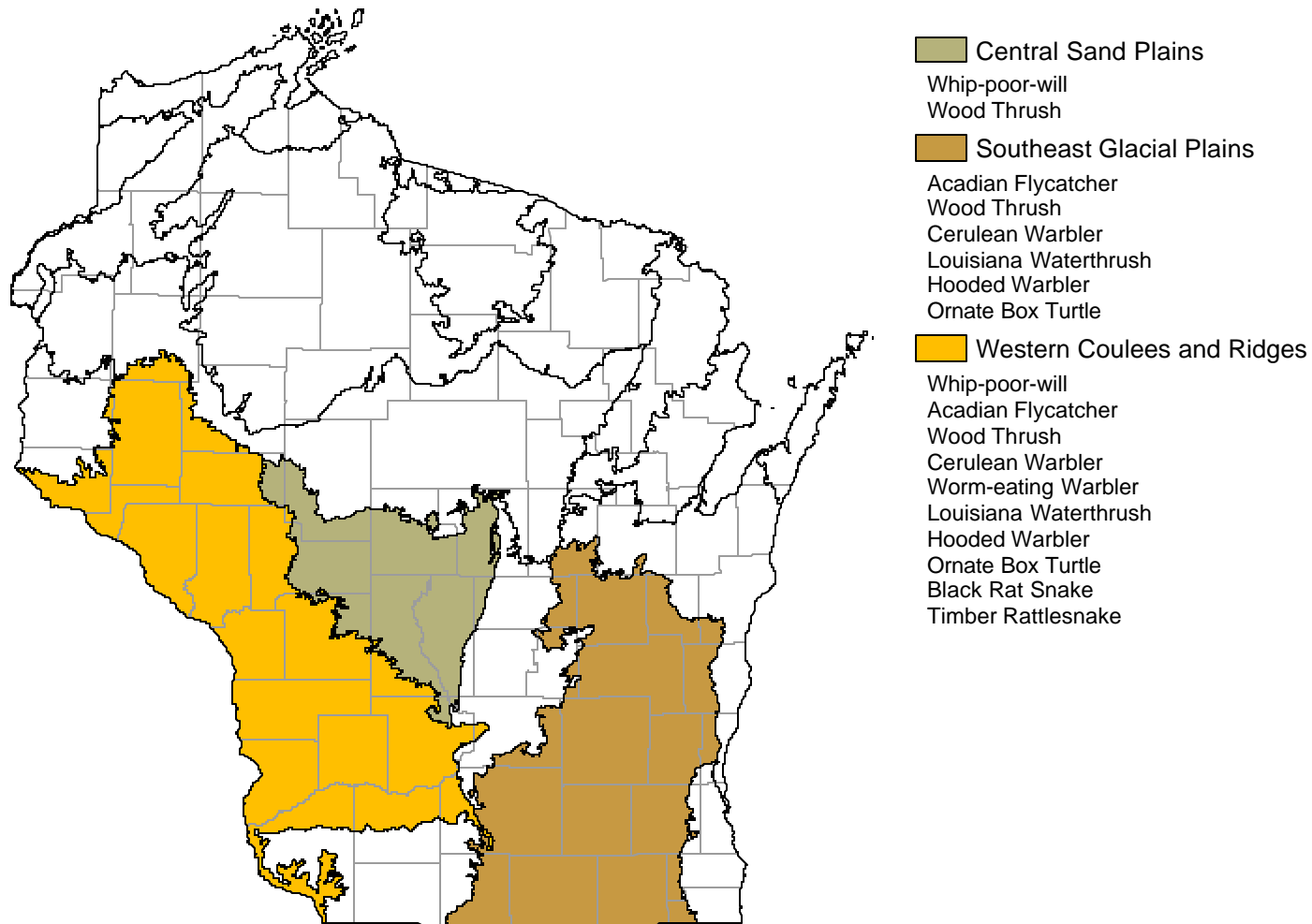
= HIGH probability the species occurs in this Ecological Landscape

= MODERATE probability the species occurs in this Ecological Landscape

= LOW or NO probability the species occurs in this Ecological Landscape

* The number shown in parentheses is the number of Species of Greatest Conservation Need from a particular taxa group that are included in the table. Taxa groups that are not shown did not have any Species of Greatest Conservation Need that met the criteria necessary for inclusion in this table.

Figure 3-33. Vertebrate Species of Greatest Conservation Need that have both a significant association with southern dry-mesic forest and a high probability of occurring in an Ecological Landscape(s) that represents a major opportunity for protection, restoration and/or management of southern dry-mesic forest.



3.3.7.6.3 Threats and Priority Conservation Actions for Southern Dry-Mesic Forest

3.3.7.6.3.1 Statewide Overview of Threats and Priority Conservation Actions for Southern Dry-Mesic Forest

The following list of threats and priority conservation actions were identified for southern dry-mesic forest in Wisconsin. The threats and priority conservation actions described below apply to all of the Ecological Landscapes in Section 3.3.7.6.3.2 unless otherwise indicated.

Threats and Issues

- Past land clearing for agriculture has fragmented this community type, resulting in edge effects and isolation.
- Farmland and residential developments are typically interspersed with woodlots. Forests are being cleared for development as urban areas expand and residents seek solitude by developing housing in remaining rural areas. Land use planning that is not comprehensive and does not emphasize conservation considerations can lead to development in locations that limit options for this community. More information is needed to understand the effects of rural housing on these forest ecosystems.
- Lack of fire is affecting regeneration of oak and associated understory species.
- High deer densities are also affecting oak regeneration and some understory species.
- Both old and young forests of this type are lacking.
- Large blocks of this forest type are lacking.
- High grading is common, and is a factor in conversion of these forests to other types. The prevalent practice of removing trees as they approach old age diminishes development of important structural features and limits mast production important to wildlife.
- Grazing is removing understory and oak regeneration, and encourages the spread of invasives. Tax policy may be encouraging grazing of oak woodlots.
- Gypsy moth impacts may increase loss of this community type.
- Invasive plants (e.g., Asian honeysuckles, garlic mustard, multiflora rose, non-native buckthorns) are a major problem in some areas preventing oak regeneration.
- Conflicts exist regarding objectives for oak forests, which are difficult and expensive to regenerate, versus allowing conversion to central hardwoods.
- Savanna or open land objectives sometimes also compete with forest objectives.

Priority Conservation Actions

- Preserve remaining older southern dry-mesic forests and manage them to control invasives. Seek opportunities to develop and maintain larger, older blocks of this type, or connect existing blocks.
- Restore oak forests on appropriate sites.
- Manage for southern-dry mesic forest within the context of dry oak forest and savanna in a gradient from forest to native grassland.
- Maintain a component of white and bur oaks as well as red oak in this community type.
- Encourage sustainable forest community management practices and oak regeneration. Recognize that this community type is an early-to-mid-successional stage that will require active management to maintain. Use demonstration areas for the public and develop a practical “toolkit” for regenerating oak.
- Eliminate the practice of high grading.
- Encourage use of prescribed fire to regenerate these forest communities, using education and limiting liability concerns. Offer incentives for conducting prescribed burns and oak regeneration to help maintain this community type. Follow existing management guidelines for prescribed fires to minimize impacts on sensitive species.

- Monitor management activities to ensure oak regeneration success and follow up as needed.
- Limit grazing in this community type.
- Encourage sustainable land use practices that limit fragmentation of this type.
- Collect information on the effects of rural housing development on the community.
- Reduce deer density, where possible.
- Control and eliminate invasives, where possible. Continue and support research to find biocontrols for invasives; control the spread of new invasives.
- Consider management actions to control gypsy moth outbreaks to maintain oak forests on sites with high conservation value, taking care to not negatively affect other sensitive species.

3.3.7.6.3.2 Additional Considerations for Southern Dry-Mesic Forest by Ecological Landscape

Special considerations have been identified for those Ecological Landscapes where major or important opportunities for protection, restoration, and/or management of southern dry-mesic forest exist. Those considerations are described below and are in addition to the statewide threats and priority conservation actions for southern dry-mesic forest found in Section 3.3.7.6.3.1.

Additional Considerations for Southern Dry-Mesic Forest in Ecological Landscapes with *Major* Opportunities for Protection, Restoration, and/or Management of Southern Dry-Mesic Forest

Central Sand Plains

This type is not extensive in the Ecological Landscape, but some significant sites occur within the matrix of dry forest communities. Opportunities exist to maintain large blocks of oak forest in the Black River State Forest (Jackson County), Clark County Forest, Jackson County Forest, Quincy Bluff State Natural Area (Adams County), and Mill Bluff State Natural Area (Juneau County). Existing sites should be connected to other blocks of forest where possible.

Southeast Glacial Plains

Significant patches of the community type exist in both the Southern (Walworth, Jefferson, and Waukesha Counties) and Northern Units of the Kettle Moraine (Washington, Fond du Lac, and Sheboygan Counties); these may represent the best opportunities to manage for large blocks of oak forest in southeast Wisconsin. Other sites that have this community type include Hook Lake Bog (Dane County), and Millhome Forest (Manitowoc County). Opportunities to develop larger, older blocks of oak forest, and/or connect existing blocks should be sought. Remnants of old oak forests should be preserved and managed to control invasives. Some native species such as prickly ash, dogwoods, grapevines, and cherries can become aggressive in these communities in the absence of fire. Deer densities should be reduced where feasible and other factors affecting oak regeneration should be explored and addressed. Rural housing development is occurring at an especially rapid rate in this Ecological Landscape, and opportunities to promote sustainable development are desirable.

Western Coulees and Ridges

There are many opportunities to manage this community type on both public and private lands in this Ecological Landscape. Larger blocks of oak forest in the Middle and Lower Kickapoo Watershed (including the Kickapoo Valley Reserve; Vernon and Crawford Counties), the Baraboo Hills (including Devil's Lake State Park and the Badger Army Ammunition Plant; Sauk and Columbia Counties), Rush Creek State Natural Area (Crawford County), and Lower Wisconsin Riverway (Dane, Iowa, Grant, Sauk,

Richland, and Crawford Counties) should be maintained. There are opportunities to maintain this community type on private land through Managed Forest Law and other private lands forestry programs.

Additional Considerations for Southern Dry-Mesic Forest in Ecological Landscapes with **Important** Opportunities for Protection, Restoration, and/or Management of Southern Dry-Mesic Forest

Central Lake Michigan Coastal

Although southern dry-mesic forests are not widespread in this Ecological Landscape, there is an opportunity to maintain a large, older block of oak forest along the lower Wolf River. Other sites occur at Fairy Chasm (Ozaukee County) and Waldkirch Oak Woods (Brown County).

Central Sand Hills

Several significant sites of this community type occur in this Ecological Landscape. They occur at Gibraltar Rock State Natural Area and Otsego Oak-Maple Woods (Columbia County), Caves Creek Fisheries Area and Fox River Crane Marsh (Marquette County), and Mud Lake-Radley Creek Savanna State Natural Area (Waupaca County).

Southwest Savanna

Several opportunities exist to manage southern dry-mesic forests in this Ecological Landscape. Examples of the community type exist at Browntown Oak Forest State Natural Area and New Glarus Woods State Natural Area (Green County), Weir White Oaks State Natural Area and Yellowstone Wildlife Management Area (Lafayette County), and Pecatonica River Woods State Natural Area (Iowa County).

Southern Lake Michigan Coastal

Examples of this community type are found at Cudahy Woods State Natural Area and Fall Park Woods (Milwaukee County), Bishop's Woods and Muskego Park Hardwoods (Waukesha County), Silver Lake Bog State Natural Area (Kenosha County), and Sander's Park Hardwoods State Natural Area (Racine County). River corridors offer the best opportunities to develop forest connectivity. In urban settings, encourage planting of oaks in parks and adjacent to existing urban woodlands. The native prickly ash, dogwoods, grapevine, and cherries are aggressive in the absence of fire. High deer densities and other factors may be affecting oak regeneration, particularly in urban park areas.

Western Prairie

This community type occurs on bluffs along the St. Croix River where it would have historically been protected from frequent fire disturbance. Larger blocks of oak forest along the St. Croix River bluffs, in areas east of the Willow River, and along the Kinnickinnic River should be maintained. Management should occur within the context of floodplains, southern mesic forest, dry oak forest and savanna in a gradient from forests to native and surrogate prairie grasslands. Urban expansion is occurring in this Ecological Landscape; housing developments can impact this community directly and also limit opportunities to manage with prescribed fire.